

**ERROR DIFFUSION USING NEXT SCANLINE ERROR
IMPULSE RESPONSE**

5

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An apparatus (1100) for halftoning an image is disclosed. The apparatus comprises means for determining an output value of a current pixel on a current scanline using a sum of an input value (1102) for the current pixel and a neighbourhood error value (1150) at the current pixel, means (1124) for determining an error at the current pixel as the difference between (i) the sum of the input value (1102) for the current pixel and the neighbourhood error value (1150) at the current pixel, and (ii) the output value (1120) of the current pixel; and means (1140) for adding a proportion of the error at the current pixel to neighbourhood error values at as yet unprocessed pixels of a subsequent scanline in accordance with a next scanline error impulse response; wherein said next scanline error impulse response approximates a function which spreads with self-convolution in proportion to a degree of self-convolution.

15